



Dart Hawkesbury  
1270 Aberdeen St Hawkesbury, ON K6A 1K7 Canada  
Tel (613) 632-5200  
Fax 613 632-5246

# Purchasing Receipts

PO No	Supplier	Line Item No	Rel No	Terms	Purchased Item	Description	For Part No	Project	Equipment ID	Order Qty	Due Date	Received Quantity	Accounting Job No	Container No	Status	Receive Date	Price/Unit	Aging Days	Past Due	Total	Supplier Name
P0041892	MCM001-VU	1	1	2% 10 Net 30	9273K42	Velcro Hook & Loop Color: Black				50	12/4/2018	50		S134204	Inactive	12/3/2018	\$ 1.82 / ft	0		\$91.19	McMaster-Carr Supply Co.
		2			7856K75	Heat Shrink Tubing Color Black receive pcs						50		S134207	Stock	12/3/2018	\$ 0.80 / ft	0		\$40.18	McMaster-Carr Supply Co.
		3			91732A704	SS Helical Insert #5-40 x 1/4" Lg.				30		30		S134208	Stock	12/3/2018	\$ 0.63 / Ea	0		\$18.84	McMaster-Carr Supply Co.
		4			92185A136	SS Socket Head Cap Screw #5-40 x 1/2" Lg.				50		50		S134209	Stock	12/3/2018	\$ 0.14 / Ea	0		\$7.00	McMaster-Carr Supply Co.
		5			MT-O1-R0.625	Tool Steel Round Bar 0.625 dia.				6		6		S134211	Stock	12/3/2018	\$ 5.14 / ft	0		\$30.82	McMaster-Carr Supply Co.
		6			MT-O1-B-0.500X12.000	AISI O1 TOOL STEEL BAR 0.500" High X 12.000" Wide				3		3		S134212	Stock	12/3/2018	\$ 145.66 / ft	0		\$436.97	McMaster-Carr Supply Co.
		7			8NR-74	Bolt 5*1/2				15		15		S134210	Stock	12/3/2018	\$ 2.31 / Ea	0		\$34.65	McMaster-Carr Supply Co.
<b>Total:</b>												<b>204</b>								<b>\$659.65</b>	

Plex 12/3/2018 4:04 PM Dart.Belanger.Natasha



Dart Aerospace Ltd.  
1270 Aberdeen St  
Hawkesbury, ON  
K6A 1K7  
Canada

Tel (613) 632-5200

# **PURCHASE ORDER** **PO041892**

**Supplier:** MCM001-VU  
McMaster-Carr Supply Co,  
P.O. Box 7690  
Chicago, IL 60680-7690 USA  
Phone: 330 995 5500  
Fax: 330 995 9600

**PO No:** PO041892

**PO Date:** 11/29/18

**Due Date:** 12/4/18

**Purchase Order**

**Revision:**

**Revision Date:**

**Ship-To Contact:** Lavoie, Chantal  
clavoie@dartaero.com

**E-MAILED**  
NOV 29 2018

**Ship To:** 1270 Aberdeen Street  
Hawkesbury  
ON  
K6A 1K7 Canada  
Phone: 613-632-5200

**Via:** Ground

**Pymt Terms:** 2% 10 Net 30

**Freight Terms:**

**Special Comments:**

Items												
Line Item	Job	Part	Supplier Part No	Description	Status	Account	Due Date	Order Quantity	Received Quantity	Balance	Unit Price (USD)	Extended Price
1	187201	9273K42	50 ft	Velcro Hook & Loop Color: Black	Firmed	-	12/4/18	50 ft	0 ft	50 ft	\$1.8238/ft	\$91.19
Line Item Note as per dwg D4730 REV. B												
2		7856K75	color black 25 ft	Heat Shrink Tubing Color Black receive pcs	Firmed	-	12/4/18	50 ft	0 ft	50 ft	\$0.8036/ft	\$40.18
3		91732A704	10/pk	SS Helical Insert #5-40 x 1/4" Lg	Firmed	-	12/4/18	30 Ea	0 Ea	30 Ea	\$0.628/Ea	\$18.84
4		92185A136	50/pk	SS Socket Head Cap Screw #5-40 x 1/2" Lg.	Firmed	-	12/4/18	50 Ea	0 Ea	50 Ea	\$0.14/Ea	\$7.00
5		MT-O1-R0.625	8893K9 6 FT	Tool Steel Round Bar 0.625 dia.	Firmed	-	12/4/18	6 ft	0 ft	6 ft	\$5.1366666/ft	\$30.82
6		MT-O1-B-0.500X12.000	9516K527 3 FT	AISI 01 TOOL STEEL BAR 0.500" High X 12.000" Wide	Firmed	-	12/4/18	3 ft	0 ft	3 ft	\$145.65666/ft	\$436.97
7		8NR-74	91257A755 1/pk	Bolt 5*1/2	Firmed	-	12/4/18	15 Ea	0 Ea	15 Ea	\$2.31/Ea	\$34.65
<b>Grand Total:</b>												<b>\$659.65</b>



Dart Aerospace Ltd.  
1270 Aberdeen St  
Hawkesbury, ON  
K6A 1K7  
Canada

Tel (613) 632-5200

## PURCHASE ORDER PO041892

### Order Notes

#### Procurement Quality Clauses

A005 RIGHT OF ENTRY

A016 PERSONNEL QUALIFICATION

A026 CERTIFICATION OF MATERIAL CONFORMANCE

A032 DOCUMENT SPECIAL REQUIREMENTS

A033 STATEMENT OF CONFORMITY/TEST RECORDS FOR NAS, AN and MS FASTENERS

A040 NOTIFICATION OF QUALITY ESCAPE

A041 QUALITY MANAGEMENT SYSTEM

A042 DART NOTIFICATION BY SUPPLIER

A043 RETENTION OF QUALITY DOCUMENTS

A048 COUNTERFEIT PARTS AVOIDANCE, DETECTION, MITIGATION AND DISPOSITION PROGRAM

A049 SUPPLIER AWARENESS

Terms & Condition of Purchasing(Suppliers) and Procurement Quality Clauses are an integral part of our AS9100 requirements. To learn in detail, please visit [www.dartaerospace.com](http://www.dartaerospace.com) for further explanation.

Plex 11/29/18 2:51 PM dart.lavoie.chantal

200 Aurora Industrial Pkwy  
Aurora OH 44202-8087  
330-995-5500  
cle.sales@mcmaster.com

Dart Aerospace Ltd  
1270 Aberdeen St  
Hawkesbury ON K6A 1K7  
Canada

Purchase Order  
**PO041892**

Order Placed By  
**Chantal Lavoie**

McMaster-Carr Number  
**4679988-02**

Page 1 of 1

11/29/2018

Line	Product	Ordered	Shipped
5	8893K9 Tight-Tolerance Multipurpose O1 Tool Steel Rod, 0.6250" Diameter, 6 Feet Long	1 Each	1

200 Aurora Industrial Pkwy  
Aurora OH 44202-8087  
330-995-5500  
cle.sales@mcmaster.com

Dart Aerospace Ltd  
1270 Aberdeen St  
Hawkesbury ON K6A 1K7  
Canada

Purchase Order  
**PO041892**

Order Placed By  
**Chantal Lavoie**

McMaster-Carr Number  
**4679988-01**

Page 1 of 1

11/29/2018

Line	Product	Ordered	Shipped
6	<b>9516K527</b> Tight-Tolerance Multipurpose O1 Tool Steel Bar, 1/2" Thick, 12" Wide, 3 Feet Long	<b>1</b> Each	<b>1</b>

200 Aurora Industrial Pkwy  
Aurora OH 44202-8087  
330-995-5500  
cle.sales@mcmaster.com

Dart Aerospace Ltd  
1270 Aberdeen St  
Hawkesbury ON K6A 1K7  
Canada

Purchase Order  
**PO041892**

Order Placed By  
**Chantal Lavoie**

McMaster-Carr Number  
**4679988-03**

Page 1 of 1

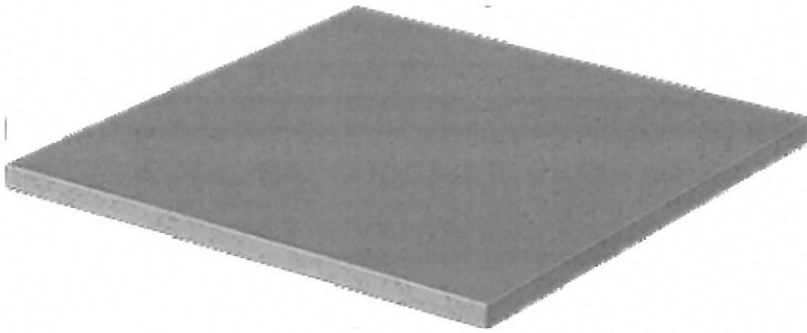
11/29/2018

Line	Product	Ordered	Shipped
1	<b>9273K42</b> ✓ Hook and Loop with Adhesive Backing, 1-1/2" Wide x 50 Feet Long, Black	1 Each	1 ✓
2	<b>7856K75</b> Heat-Shrink Tubing, 25 Feet Long, 0.25" ID Before Shrinking, Black	2 Each	2
3	<b>91732A704</b> 18-8 Stainless Steel Helical Insert, 5-40 Right-Hand Thread, 0.250" Long, Packs of 10	3 Packs	3
4	<b>92185A136</b> Super-Corrosion-Resistant 316 Stainless Steel Socket Head Screw, 5-40 Thread Size, 1/2" Long, Packs of 50	1 Pack	1
7	<b>91257A755</b> Zinc Yellow-Chromate Plated Hex Head Screw, Grade 8 Steel, 1/2"-20 Thread Size, 5" Long, Partially Threaded, Packs of 1	15 Packs	15

## Tight-Tolerance Multipurpose O1 Tool Steel Bar

1/2" Thick, 12" Wide

\$436.97 Each  
9516K527



Material	O1 Tool Steel
Cross Section Shape	Rectangle
Construction	Solid
Appearance	Plain
Thickness	1/2"
Thickness Tolerance	-0.001" to 0.001"
Tolerance Rating	Tight
Width	12"
Width Tolerance	0" to 0.015"
Yield Strength	50,000 psi
Temper Rating	Not Rated
Hardness	Rockwell B85
Hardness Rating	Medium
Heat Treatable	Yes
Maximum Hardness after Heat Treatment	Rockwell C65
Mechanical Finish	Precision Ground
Temperature Range	Not Rated
Specifications Met	ASTM A681
Flatness Tolerance	Not Rated
Density	0.28 lbs./cu. in.
Coefficient of Thermal Expansion	$7.1 \times 10^{-6}$
Elongation	25%
Material Composition	
Iron	94.79-96.95%
Carbon	0.85-1.05%
Chromium	0.40-0.70%
Manganese	1.00-1.40%
Nitrogen	0.40-0.60%
Phosphorus	0-0.030%
Silicon	0-0.50%
Sulfur	0-0.030%
Tungsten	0.40-0.60%
Vanadium	0-0.30%
Length	3 ft.

Additional	Guidelines for Heat
Specifications	Treating Tool Steel
RoHS	Not Compliant

These precision-ground sheets and bars have a tight thickness tolerance of  $\pm 0.001$ " ( $\pm 0.05$  mm). Commonly used for dies, punches, and gauges, O1 tool steel is an oil-hardening material that resists wear and abrasion. Sheets and bars are also known as flat stock.



REV.	DESCRIPTION	DATE	BY	APPROVED
A	NEW ISSUE	17.08.09	VM	WM

## SPECIFICATION CONTROL DRAWING

PURCHASE MATERIAL: AISI O1 TOOL STEEL BAR

SPECIFICATION: DIN 1.2510 or B.S. BO 1 or  
SAE J437 or SAE J438  
or UNS T31501 or ASTM A681

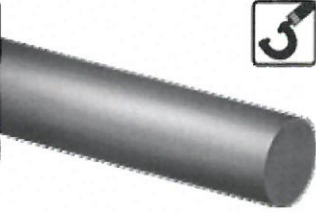
PART NUMBER: MT-O1-B-[H.HHH]-[W.WWW]  
WHERE "H.HHH" = HEIGHT IN INCHES  
WHERE "W.WWW" = WIDTH IN INCHES  
EG. 4"x6" BAR = MT-O1-B-4.000x6.000

TOLERANCES PER MANUFACTURER SPECIFICATIONS

<b>DART</b> AEROSPACE	
Hawthorn, Ontario, Canada	
TITLE <b>AISI O1 TOOL STEEL BAR</b>	
PROJ NO. <b>MT-O1-B</b>	REV <b>A</b>
DESIGN BY: <b>VM 5/5/2017</b>	XXX 2 005 FRACTIONS & 1/8
DRAWN BY: <b>SAC 09/07/2017</b>	XX 2 01 ANGLES & 1/2
CHECKED: <b>VM 09/07/2017</b>	1. DIMENSIONS ARE IN INCHES
WELD APPR: <b>PD 09/07/2017</b>	2. DIMENSIONS ARE IN INCHES
QA APPR: <b>PD 09/05/2017</b>	3. DIMENSIONS ARE IN INCHES
APPROVED: <b>VM 09/12/2017</b>	4. DIMENSIONS ARE IN INCHES
DATE: <b>9/7/2017</b>	5. DIMENSIONS ARE IN INCHES
SCALE: NTS (NATURAL SIZE) SHEET 1 OF 1	
COPYRIGHT © 2017 BY DART AEROSPACE LTD	
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ELW 17-649

Tight-Tolerance Multipurpose O1 Tool Steel Rods



- Yield Strength: 50,000 psi
- Hardness: Rockwell B90 (Medium)
- Heat Treatable: Yes
- Max. Hardness after Heat Treatment:  
Inch sizes: Rockwell C65  
Metric sizes: Rockwell C62
- Specifications Met: ASTM A681

These precision-ground rods have a tight diameter tolerance. Commonly used for dies, punches, and gauges, O1 tool steel is an oil-hardening material that resists wear and abrasion.

Dia.	Dia. Tolerance	Temper Rating	Mechanical Finish		1 ft. Lg.	3 ft. Lg.	6 ft. Lg.
0.625"	-0.001" to 0.001"	Softened (Annealed)	Precision Ground	8893K9	\$9.25	\$16.95	\$30.82



Product Detail

Tight-Tolerance Multipurpose O1 Tool Steel Rod, 0.6250" Diameter

Guidelines for Heat Treating Tool Steel

Length, ft.

✓ 6

☐ Each

ADD TO ORDER

Delivers tomorrow  
10-12 pm

8 7 6 5 4 3 2 1

REV.	DESCRIPTION	DATE	BY	APPROVED
A	NEW ISSUE	17.08.09	VM	VM

**SPECIFICATION CONTROL DRAWING**

PURCHASE MATERIAL : AISI O1 TOOL STEEL ROUND BAR  
SPECIFICATION: DIN 1.2510 or B.S. BO 1 or  
SAE J437 or SAE J438  
or UNS T31501 or ASTM A681  
PART NUMBER: MT-O1-R [D.DDD]  
WHERE "D.DDD" = DIAMETER IN INCHES  
EG. 5/8" ROUND BAR = MT-O1-R0.625

**DART**  
AEROSPACE

Hawthornby, Ontario, Canada

TITLE  
AISI O1 TOOL STEEL ROUND BAR

DWG NO.

REV  
A

MT-O1-R

DESIGN BY: VM 8/3/2017

DRAWN BY: VM 8/3/2017

CHECKED: SAC 08/12/2017

MFG. APPL: DP 09/05/2017

QA APPL: PD 09/12/2017

APPROVED: VM 09/12/2017

DATE: 8/31/2017

SCALE: NTS

WEIGHT: N/A LBS

SHEET 1 OF 1

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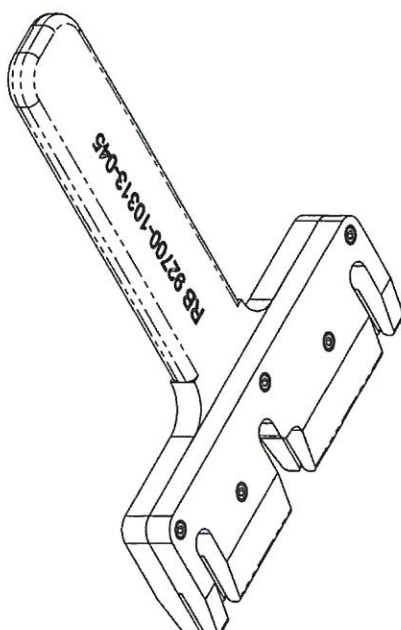
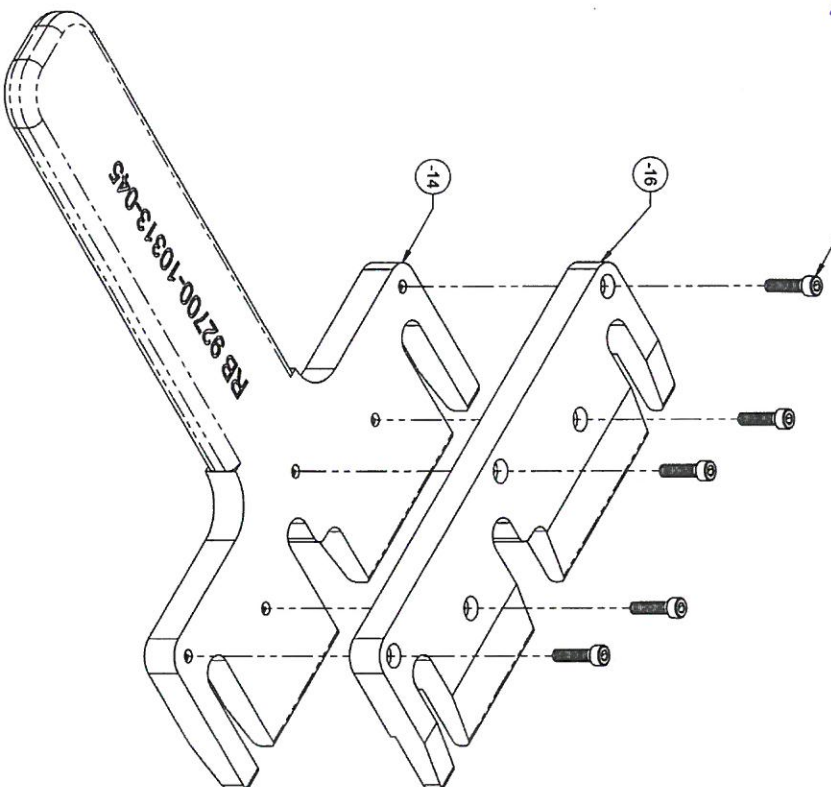
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EW 17-149

ITEM #	QTY	PART #	PART TITLE
-14	1	RB 92700-10313-045-14	TRIM TAB BENDER 1 ASSY
-16	1	RB 92700-10313-045-16	TRIM TAB BENDER PLATE 2
29	5	McMaster#92185A136 OR EQUIV	SS SOCKET HEAD CAP SCREW #5-40 x 1/2" LG.



RB 92700-10313-045-13 TRIM TAB ADJUSTMENT TOOL

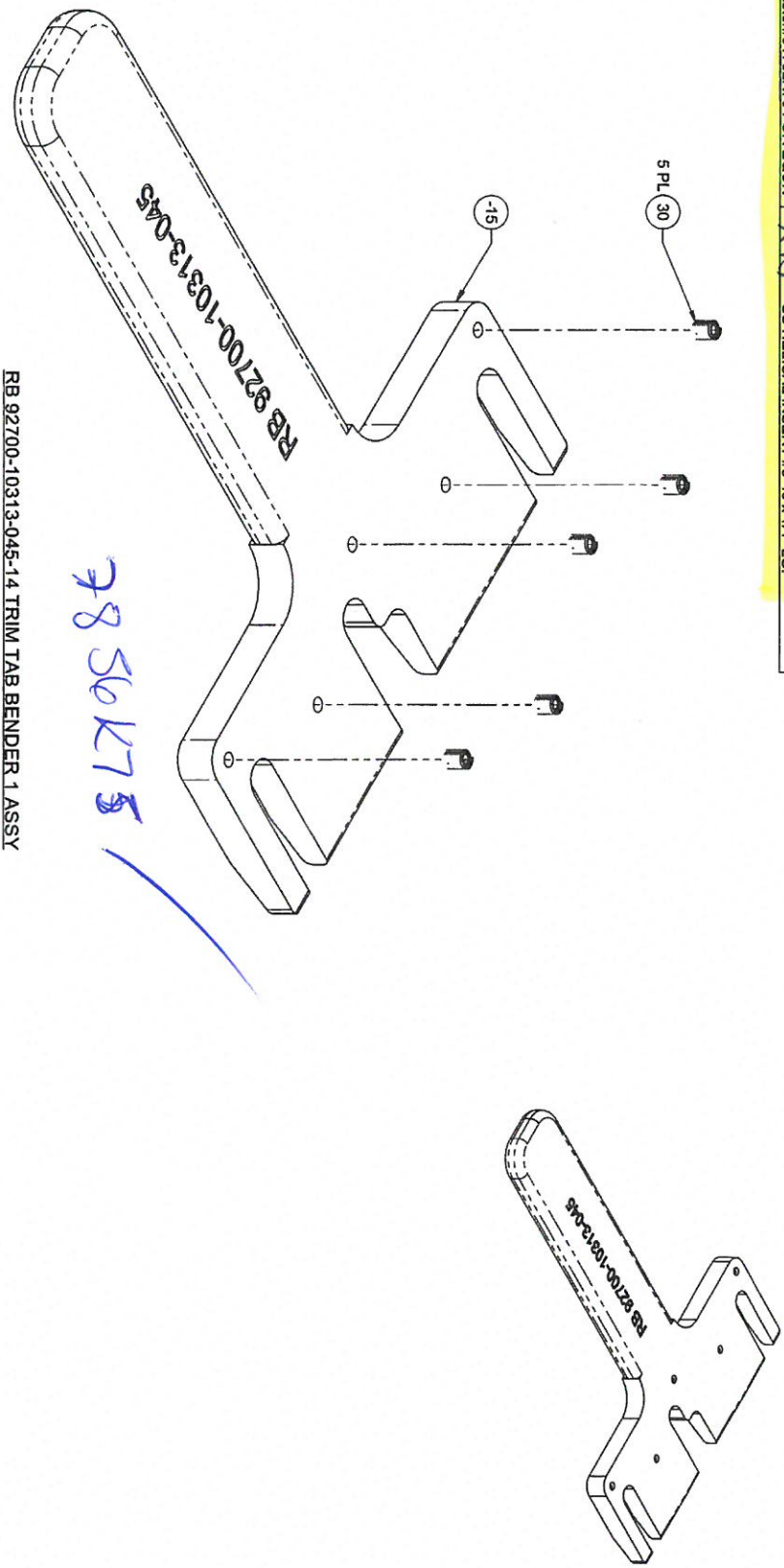
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- NOTES:
- 1) MATERIAL: N/A
  - 2) HEAT TREAT: N/A
  - 3) FINISH: N/A
  - 4) TOLERANCES: X.X =  $\pm 0.1^{\circ}$  /  $\pm 1^{\circ}$   
X.XXX =  $\pm 0.005^{\circ}$  /  $\pm 0.5^{\circ}$   
X.XXXX =  $\pm 0.0005^{\circ}$  /  $\pm 0.1^{\circ}$   
PARALLELISM, ECCENTRICITY AND SYMMETRY ABOUT ALL CENTER LINES =  $\pm 0.005^{\circ}$
  - 5) UNITS: INCHES UNLESS OTHERWISE NOTED
  - 6) BREAK SHARP EDGES: N/A
  - 7) IDENTIFICATION: N/A
  - 8) ASSEMBLE AS SHOWN
  - 9) APPLY LOCOTITE NICKEL BASED ANTI SEIZE ON THREADS OF ITEM 29 THEN ASSEMBLE WITH ITEM 14 HAND TIGHT
  - 10) THE TOOL ASSY MUST BE PACKAGED WITH A DESICCANT BAG INTO A TIGHT FITTING SEALED PLASTIC BAG

DESIGN	VM	DART AEROSPACE LTD
DRAWN	VM	HAWKESBURY, ONTARIO, CANADA
CHECKED	VM	TOOL PART #
MFG. APPR.	DP	RB 92700-10313-045
APPROVED	VM	TITLE
DATE	9/13/2018	TRIM TAB TOOL
		SCALE
		NTS

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ITEM #	QTY	PART #	PART TITLE
-15	1	RB 92700-10313-045-15	TRIM TAB BENDER PLATE 1
30	5	McMaster91732AT04 OR EQUIV	SS HELICAL INSERT #5-40 x 1/4" LG.



RB 92700-10313-045-14 TRIM TAB BENDER 1 ASSY

- NOTES:
- 1) MATERIAL: N/A
  - 2) HEAT TREAT: N/A
  - 3) FINISH: N/A
  - 4) TOLERANCES: X.X =  $\pm 0.1"$  /  $\pm 1^\circ$   
X.XX =  $\pm 0.01"$  /  $\pm 0.5^\circ$   
X.XXX =  $\pm 0.005"$  /  $\pm 0.1^\circ$   
X.XXXX =  $\pm 0.0005"$  /  $\pm 0.05^\circ$   
PARALLELISM, ECCENTRICITY AND SYMMETRY ABOUT ALL CENTER LINES =  $\pm 0.005"$
  - 5) UNITS: INCHES UNLESS OTHERWISE NOTED
  - 6) BREAK SHARP EDGES: N/A
  - 7) IDENTIFICATION: N/A
  - 8) ASSEMBLE AS SHOWN

DESIGN	VM	DART AEROSPACE LTD
DRAWN	VM	HAWKESBURY, ONTARIO, CANADA
CHECKED	VM	REV. A
MFG. APPR.	DP	RB 92700-10313-045
APPROVED	VM	SHEET 15 OF 20
DATE	9/13/2018	SCALE
		NTS

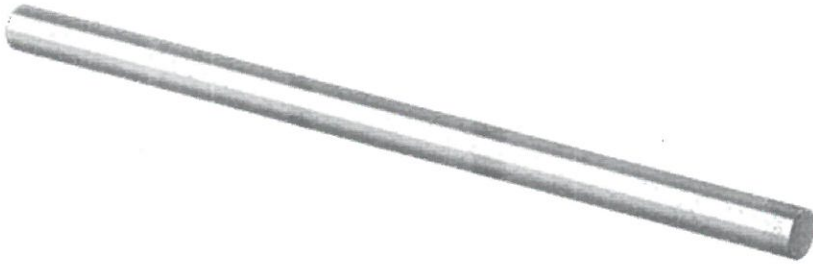
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## Tight-Tolerance Multipurpose O1 Tool Steel Rod

0.6250" Diameter

8893K9



Material	O1 Tool Steel
Cross Section Shape	Round
Construction	Solid
Appearance	Plain
Diameter	0.625"
Diameter Tolerance	-0.001" to 0.001"
Tolerance Rating	Tight
Yield Strength	50,000 psi
Temper Rating	Softened (Annealed)
Hardness	Rockwell B90
Hardness Rating	Medium
Heat Treatable	Yes
Maximum Hardness after Heat Treatment	Rockwell C65
Mechanical Finish	Precision Ground
Temperature Range	Not Rated
Specifications Met	ASTM A681
Straightness Tolerance	Not Rated
Density	0.28 lbs./cu. in.
Coefficient of Thermal Expansion	$7.1 \times 10^{-6}$
Elongation	25%
Material Composition	
Iron	94.79-96.95%
Carbon	0.85-1.05%
Chromium	0.40-0.70%

Manganese	1.00-1.40%
Nitrogen	0.40-0.60%
Phosphorus	0-0.030%
Silicon	0-0.50%
Sulfur	0-0.030%
Tungsten	0.40-0.60%
Vanadium	0-0.30%
Length	1 ft., 3 ft., 6 ft.
Additional Specifications	Guidelines for Heat Treating Tool Steel
RoHS	Compliant

These precision-ground rods have a tight diameter tolerance. Commonly used for dies, punches, and gauges, O1 tool steel is an oil-hardening material that resists wear and abrasion.



5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

REV.	DESCRIPTION	DATE	BY	APPROVED
A	NEW ISSUE	17.08.09	VM	VM

## SPECIFICATION CONTROL DRAWING

PURCHASE MATERIAL : AISI O1 TOOL STEEL ROUND BAR  
SPECIFICATION: DIN 1.2510 or B.S. BO 1 or SAE J437 or SAE J438 or UNS T31501 or ASTM A681  
PART NUMBER: MT-O1-R [D.DDD]  
WHERE "D.DDD" = DIAMETER IN INCHES  
EG. 5/8" ROUND BAR = MT-O1-R0.625

<b>DART AEROSPACE</b> Hamilton, Ontario, Canada	
TITLE: AISI O1 TOOL STEEL ROUND BAR	
DATE: 8/31/2017	SCALE: NTS (WEIGHT: N/A LBS)
DESIGN BY: VM 8/2/2017	MT-O1-R
DRAWN BY: VM 8/2/2017	XX 21 ANGLES 5°
CHECKED: SAC 08/11/2017	1. DIMENSIONS ARE IN INCHES
MAF APPR: DP 08/05/2017	2. UNLESS OTHERWISE SPECIFIED
QA APPR: VM 08/12/2017	3. DIMENSIONS ARE TO TOLER
DATE: 8/31/2017	4. DIMENSIONS ARE TO TOLER
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EN 1749



# MATERIAL RECEIPT INSPECTION FORM

MATERIAL: M7-01-RD-625  
 DATE: 18/12/03

PO / BATCH NO.: P0041892/S13421

MATERIAL CERT REC'D: Yes  
 QUANTITY RECEIVED: 644  
 QUANTITY INSPECTED: 644  
 QUANTITY REJECTED: 0

THICKNESS ORDERED: 0.625"  
 THICKNESS RECEIVED: 0.625"  
 SHEET SIZE ORDERED: —  
 SHEET SIZE RECEIVED: —

DESCRIPTION	NCR (Check Y/N)		COMMENTS
SURFACE DAMAGE	Y	<u>(N)</u>	
CORRECT FINISH	<u>(Y)</u>	N	
CORROSION	Y	<u>(N)</u>	
CORRECT GRAIN DIRECTION	<u>(Y)</u>	N	
CORRECT MATERIAL PER M-DRAWING	<u>(Y)</u>	N	<u>01 TOOL STEEL ASTM A681</u>
CORRECT THICKNESS	<u>(Y)</u>	N	
PHOTO REQUIRED	Y	<u>(N)</u>	
CORRECT REF # TO LINK CERT	<u>(Y)</u>	N	<u>P0041892</u>
CORRECT MATERIAL IDENTIFICATION	<u>(Y)</u>	N	
CORRECT M# ON THE MATERIAL	<u>(Y)</u>	N	
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	Y	<u>(N)</u>	
DOES THIS REQUIRE AN EXTRUSION REPORT	Y	<u>(N)</u>	

CUT SAMPLE PIECE OF MATERIAL AND PERFORM A HARDNESS CHECK. RECORD RESULTS BELOW					
	HRC	HRB	DUR A	DUR D	WEBSTER
TYPE OF MATERIAL					
SIZE OF TEST SAMPLE					
HARDNESS / DUROMETER READING					

testers located in the Quality Office

QC 18 INSPECTION	ENGINEERING SIGNOFF (if required)
INSPECTED BY: <u>DAS 61</u>	SIGNED OFF BY: _____
DATE: <u>18-9-89</u> <u>18/12/03</u>	DATE: _____

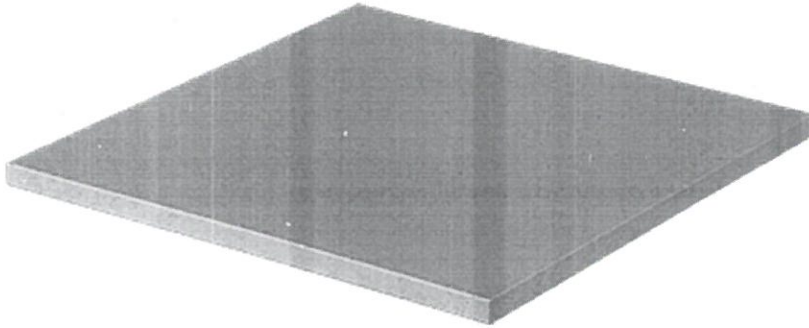
Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in

**McMASTER-CARR®**

## Tight-Tolerance Multipurpose O1 Tool Steel Bar

1/2" Thick, 12" Wide

9516K527



Material	O1 Tool Steel
Cross Section	Rectangle
Shape	
Construction	Solid
Appearance	Plain
Thickness	1/2"
Thickness Tolerance	-0.001" to 0.001"
Tolerance Rating	Tight
Width	12"
Width Tolerance	0" to 0.015"
Yield Strength	50,000 psi
Temper Rating	Not Rated
Hardness	Rockwell B85
Hardness Rating	Medium
Heat Treatable	Yes
Maximum Hardness after Heat Treatment	Rockwell C65
Mechanical Finish	Precision Ground
Temperature Range	Not Rated
Specifications Met	ASTM A681
Flatness Tolerance	Not Rated
Density	0.28 lbs./cu. in.
Coefficient of Thermal Expansion	$7.1 \times 10^{-6}$
Elongation	25%
Material Composition	
Iron	94.79-96.95%
Carbon	0.85-1.05%

Chromium	0.40-0.70%
Manganese	1.00-1.40%
Nitrogen	0.40-0.60%
Phosphorus	0-0.030%
Silicon	0-0.50%
Sulfur	0-0.030%
Tungsten	0.40-0.60%
Vanadium	0-0.30%
Length	1 1/2 ft., 3 ft., 6 ft.
Additional Specifications	Guidelines for Heat Treating Tool Steel

These precision-ground sheets and bars have a tight thickness tolerance of  $\pm 0.001"$  ( $\pm 0.05$  mm). Commonly used for dies, punches, and gauges, O1 tool steel is an oil-hardening material that resists wear and abrasion. Sheets and bars are also known as flat stock.

# SPECIFICATION CONTROL DRAWING

PURCHASE MATERIAL: AISI O1 TOOL STEEL BAR

SPECIFICATION:

DIN 1.2510 or B.S. BO 1 or  
SAE J437 or SAE J438  
or UNS T31501 or ASTM A681

PART NUMBER:

MT-O1-B-[H.HHH]x[W.WWW]  
WHERE "H.HHH" = HEIGHT IN INCHES  
WHERE "W.WWW" = WIDTH IN INCHES

EG. 4"x6" BAR = MT-O1-B-4.000x6.000

TOLERANCES PER MANUFACTURER SPECIFICATIONS

REV.	DESCRIPTION	DATE	BY	APPROVED
A	NEW ISSUE	17.08.09	VM	WM

<b>DART</b> AEROSPACE		Head Office: O'Leary, Canada	
TITLE: AISI O1 TOOL STEEL BAR			
FORM NO.		REV. A	
DESIGN BY: VM 8/3/2017		XX 1.005 FRACTIONS 1/16	
DRAWN BY: SAC 09/07/2017		XX 1/16 ANGLES 15°	
CHECKED: VM 09/07/2017		X SURFACES = 125	
MTL APPR: PD 09/08/2017		1. UNLESS OTHERWISE SPECIFIED	
QA APPR: PD 09/08/2017		2. ASME Y14.5M-2009	
APPROVED: VM 09/12/2017		3. DIMENSIONAL LIMITS APPLY	
DATE: 9/7/2017		SCALE: NTS WEIGHT: N/A LBS	
SHEET 1 OF 1		COPYRIGHT © 2017 BY DART AEROSPACE LTD.	

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EW 17-189

## MATERIAL RECEIPT INSPECTION FORM

MATERIAL: MT-01-B-0.500x12.000

PO / BATCH NO.: P0041892 / S134212

DATE: 18/12/03

MATERIAL CERT REC'D: Yes

THICKNESS ORDERED: 0.500"

QUANTITY RECEIVED: 34

THICKNESS RECEIVED: 0.500"

QUANTITY INSPECTED: 34

SHEET SIZE ORDERED: —

QUANTITY REJECTED: 0

SHEET SIZE RECEIVED: —

DESCRIPTION	NCR (Check Y/N)		COMMENTS
SURFACE DAMAGE	Y	<input checked="" type="checkbox"/> N	
CORRECT FINISH	<input checked="" type="checkbox"/> Y	N	
CORROSION	Y	<input checked="" type="checkbox"/> N	
CORRECT GRAIN DIRECTION	<input checked="" type="checkbox"/> Y	N	
CORRECT MATERIAL PER M-DRAWING	<input checked="" type="checkbox"/> Y	N	01 TOOL STEEL ASTM A681
CORRECT THICKNESS	<input checked="" type="checkbox"/> Y	N	
PHOTO REQUIRED	Y	<input checked="" type="checkbox"/> N	
CORRECT REF # TO LINK CERT	<input checked="" type="checkbox"/> Y	N	P0041892
CORRECT MATERIAL IDENTIFICATION	<input checked="" type="checkbox"/> Y	N	
CORRECT M# ON THE MATERIAL	<input checked="" type="checkbox"/> Y	N	
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	Y	<input checked="" type="checkbox"/> N	
DOES THIS REQUIRE AN EXTRUSION REPORT	Y	<input checked="" type="checkbox"/> N	

CUT SAMPLE PIECE OF MATERIAL AND PERFORM A HARDNESS CHECK. RECORD RESULTS BELOW					
	HRC	HRB	DUR A	DUR D	WEBSTER
TYPE OF MATERIAL					
SIZE OF TEST SAMPLE					
HARDNESS / DUROMETER READING					

testers located in the Quality Office

QC 18 INSPECTION	ENGINEERING SIGNOFF (if required)
INSPECTED BY: <u>61</u>	SIGNED OFF BY: <u>—</u>
DATE: <u>18/12/03</u>	DATE: <u>—</u>

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in